COPY

PATENTS
104005-0111

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re The Application of:
John T. Lynch et al.

Serial No.: 09/544,735

Filed: April 7, 2000

For: METHOD AND APPARATUS FOR DYNAMIC ALLOCATION OF CONFERENCING RESOURCES IN A TELECOMMUNICATIONS SYSTEM

Examiner: Melanie Jagannathan

Art Unit: 2666

Cesari and McKenna, LLP
88 Black Falcon Avenue
Boston, MA 02210
February 2, 2005

"Express Mail" Mailing-Label Number: EV 433572497 US

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

AMENDMENT

In response to the Office action dated November 3, 2004, please enter the following amendments:

IN THE CLAIMS:

1. (Cancelled)

2. (Currently Amended) A method of providing conferencing resources in an expandable telecommunications system having a plurality of nodes, and a host coupled to at least one node for controlling the system in which conferencing resources are utilized by one or more nodes participating in a conference, the method including the steps of:

(A) providing the plurality of nodes with means for connecting and disconnecting communications paths between a plurality of ports having digital network/line interfaces that couple the node with the PSTN and private networks, said nodes including switching nodes that can switch communications to any port connected to the system, and at least two of said switching nodes being conferencing nodes, said conferencing nodes including individual digital signal processing (DSP) circuits programmed to perform a conference between three or more participants who are callers connected at any port in the system and said conferencing nodes are also capable of switching communications, including conferenced output to any other port interfaced with the system from the PSTN and private networks, and said switching nodes, including said conferencing nodes, having switching buses on which that node is assigned time slots for transmitting and receiving data and control information and said switching nodes, including said conferencing nodes, being connected in communicating relationship by an inter-nodal network;

(B) coupling one or more participants to said PSTN and private networks via a telecommunication device, without requiring that said coupling to be made via Internet connection;

[[(B)]] (C) at the time of request, defining a requested conference as being of one of a dynamic conference type, a critical conference type and a static conference type;

[[(C)]] (D) identifying the DSP circuit within a conferencing node that satisfies at least one of the following:

(i) the greatest amount of available channels in said system so that the conference can grow as large as possible;

(ii) is currently handling no other conferences so that all channels are available for use by the conference; and

(iii) has a "best fit" such that the system can attempt to fit as many conferences as possible on a single DSP chip before assigning conferences to another DSP chip; and

[[(D)]] (E) after one or more of said DSP circuits have been identified, determining whether the node in which said identified DSP circuit is located has sufficient available time slots on its switching bus to manage the data to and from all of the participants in the requested conference.

3. (Currently Amended) A method of providing conferencing resources in an expandable telecommunications system having a plurality of nodes, and a host coupled to at least one node for controlling the system in which conferencing resources are utilized by one or more nodes participating in a conference, the method including the steps of:

(A) providing the plurality of nodes with means for connecting and disconnecting communications paths between a plurality of ports having digital network/line interfaces that couple the node with the PSTN and private networks, said nodes including switching nodes that can switch communications to any port connected to the system, and at least two of said switching nodes being conferencing nodes, said conferencing nodes including individual digital signal processing (DSP) circuits programmed to perform a conference between three or more participants who are callers connected at any port in the system, and said switching nodes having switching buses on which that node is assigned time slots for transmitting and receiving data and control information and said switching nodes being connected in communicating relationship by an inter-nodal network;

(B) defining a requested conference as being of one of a dynamic conference type, a critical conference type and a static conference type, including determining con-

ference type by employing statistical analysis and/or historical data about past system conference behavior in said statistical analysis to predict conference type;

(C) identifying the DSP circuit within a conferencing node that has available resources for performing a conferencing function for a conference of that type as requested in the system[]]; and

(D) after said DSP circuit has been identified, determining whether the node in which said identified DSP circuit is located has sufficient available time slots on its switching bus to manage the data to and from all of the participants in the requested conference.

4. (Cancelled)

5. (Previously Presented) The method of providing conferencing resources as defined in claim 2, including the further step of employing user-defined parameters to determine conference type.

6. (Previously Presented) The method of providing conferencing resources as defined in claim 3, including the further step of using historical information about an average conference generally handled by a particular system and handled at a particular port to predict conference type.

7. (Previously Presented) The method of providing conferencing services as defined in claim 2, including the further step of defining as said dynamic conference a conference that is likely to change in size based upon predetermined criteria.

8. (Previously Presented) The method of providing conferencing services as defined in claim 7, including the further step of assigning the DSP circuit card having the maximum available capacity to a conference which has been identified as a dynamic conference.

9. (Previously Presented) The method of providing conferencing services as defined in claim 8, including the further step of selecting for a dynamic conference the DSP circuit in the system having as many channels as possible such that a conference can grow as large as possible and that channels remain available for participants who join the conference while in progress.

10. (Previously Presented) The method of providing conferencing services as defined in claim 2 including the further step of defining as said critical conference a conference that requires the maximum opportunity for growth in the system.

11. (Previously Presented) The method of providing conferencing services as defined in claim 10 including the further step of selecting, for a critical conference, the DSP circuit with the maximum available capacity and instructing the DSP circuit with said maximum available capacity to reserve these conference resources and to establish the conference, and further instructing the DSP circuit to block other conferences from being assigned to that DSP circuit such that capacity remains available for that critical conference, for the life of that critical conference.

12. (Previously Presented) The method of providing conferencing services as defined in claim 11 including the further step of revealing blocked channels for use by the DSP circuit, after the critical conference is finished.

13. (Previously Presented) The method of providing conferencing services as defined in claim 2, including the further step of defining as said static conference a conference in which the number of participants will remain substantially constant.

14. (Previously Presented) The method of providing conferencing services as defined in claim 13, including the further step of assigning a static conference to a DSP circuit on a "best fit" basis.

15. (Currently Amended) A method of providing conferencing resources in an expandable telecommunications system having a plurality of nodes, and a host coupled to at least one node for controlling the system in which conferencing resources are utilized by one or more nodes participating in a conference, the method including the steps of:

(A) providing said telecommunications system with a line-to-switch (LSD) data bus comprised of multiple individual bus conductors, each bus conductor carrying time slots coming into the node from line cards, including T1 line cards, and said system further including a switch-to-line (SLD) data bus comprised of multiple individual bus conductors that carry time slots of PCM-encoded data from a nodal switch in the node back out to a destination line card;

(B) defining a requested conference as being of one of a dynamic conference type, a critical conference type and a static conference type;

(C) identifying the DSP circuit within a conferencing node that has available resources for performing a conferencing function for a conference of the type requested; and

(D) identifying a zone of time slots having the lowest order of allocation such that it is least likely to be taken when a new T1 card is inserted into the system during operation, and assigning a conferencing node to use these lowest orders of allocation time slots for a requested conference.

16. (Previously Presented) The method of providing conferencing resources as defined in claim 15, including the step of:

(a) allocating zones of time slots in such a manner that 192 time slots of a T1 span are divided into the following segments:

time slots 0-191 are in the regular T1 channel;

time slots 192-215 are the lower dead zone;

time slots 216-223 are in the lower small dead zone;

time slots 224-247 are in the upper large dead zone; and

time slots 248-255 are in the upper small dead zone; and

(b) assigning time slots in the lower and upper small dead zones of the individual bus conductors to conferences.

17. (Cancelled)

18. (Currently Amended) An expandable telecommunications system having means for conferencing three or more participants interfaced with the system, the system comprising:

(A) a plurality of nodes for performing telecommunications switching, each of said switching nodes including means for dynamically connecting or disconnecting communication paths with respect to various ones of a plurality of ports, means for time switching information to or from said ports, means for coupling the node with the PSTN and private networks via digital network/line interfaces, said nodes including switching nodes that can switch communications to any port connected to the system via the PSTN and private networks, and means for transmitting and receiving information in packetized form, and means connected in communicating relationships including a bus for carrying data to and from said ports;

(B) a host connected in communicating relationship with at least one of said switching nodes, said host controlling predetermined operations of the system;

(C) means in said switching nodes for generating and sending a message requesting establishment of a conference call for at least three conferees connected to one or more of said nodes;

(D) means for interconnecting said switching nodes in communicating relationships and operable in conjunction with said transmitting and receiving means to transfer said packetized information such that information which originates from any port in the switching nodes is substantially continuously communicable to any node interfaced with said interconnecting means;

(E) at least one conferencing node for providing conferencing services, said at least one conferencing node interfaced with said interconnecting means and including individual DSP circuits, said conferencing node also having means for switching com-

munications, including conferenced output to any other port interfaced with the system from the PSTN and private networks; and

(F) means for allocating conferencing resources including:

1. means for determining whether a DSP circuit in a conferencing node has available conferencing resources to perform a requested conference; and

2. means for determining whether the conferencing node has sufficient available time slots on its switching buses to manage the data to and from the conferences or a particular requested conference [[The expandable telecommunications system as defined in claim 17 further comprising:]]

[[A.]] G. a DSP card in said conferencing node, including:

1. a DSP module which contains a plurality of DSP circuits; and

2. a CPU including means for receiving messages about conferences to be established, and means for routing voice information to a DSP chip identified for a particular conference; and

[[B.]] H. line-to-switch (LSD) data bus interfaced with line cards which connect ports in the system, and which carries a PCM-encoded voice information from the line cards to said DSP cards.

19. (Previously Presented) The expandable telecommunications system as defined in claim 18 wherein said voice information for paid conference arrives at a port coupled with one or more of the following:

a. a landline telephone;

b. the PSTN;

c. a private network;

d. a wireless network; and

e. the Internet.

20. (New) A method of providing conferencing resources in a telecommunications system, including the steps of:

(A) coupling a participant with a telecommunications device without requiring that said coupling include an Internet connection, including:

(i) a landline telephone connected to either the PSTN, a private network or a wireless connection;

(ii) a mobile telephone; and

(iii) a personal computer;

(B) at the time of a conference request, defining a conference as being one of a dynamic conference type, a critical conference type and a static conference type; and

(C) assigning resources within said telecommunications switching system by identifying a node having a DSP circuit that has sufficient available channels to accommodate the conference as defined.

21. (New) The method of providing conferencing resources in a telecommunications system as defined in claim 20, including the further step of:

assigning said resources to a DSP circuit that satisfies at least one of the following conditions:

(a) has the greatest amount of currently available channels in said system so that the conference can grow as large as possible;

(b) is currently handling no other conferences so that all channels are available for use by the conference; and

(c) has a "best fit" such that the system can attempt to fit as many conferences as possible on a single DSP chip before assigning conferences to another DSP chip.

REMARKS

The Office Action dated November 3, 2004, has been reviewed carefully and the application has been amended in a sincere effort to place the claims in condition for allowance.

Claim Objections

Claim 3 was objected to due to a typographical error and the correction has been made in accordance with the Examiner's request.

Double Patenting

Claims 2 and 17 were rejected under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1 – 10 and 13 of Hebert et al., United States Patent No. 5, 920,546 ("Hebert") in view of Phaal, United States Patent No. 6,055,564 ("Phaal").

Briefly, Applicant's invention as claimed in claims 2 and 17 involves a method of providing conferencing services for many types of conferences including large conferences of 30 or more participants as well as conferences that may change in size dynamically. In addition, the inventive conferencing services can be provided to participants that are coupled to the system via any type of telecommunication device, such as a conventional landline telephone, a mobile phone, and other personal communication devices. The Applicants' method includes defining a requested conference in a particular way in

order to most effectively accommodate the conference, if it is a priority, or to efficiently manage the resources of the system.

These features are not taught by the commonly owned Hebert reference. The Hebert system provides a conferencing function, but does not allow for defining a type of conference at the time of the request. In addition, Hebert does not use an algorithm for assigning the DSP circuit according to one of various parameters that can be user defined in order to accommodate the conference and/or to preserve system resources.

As noted by the Examiner, Hebert does not disclose the limitation of claim 2 that recites that the requested conference is defined as being one of a dynamic, critical and/or static type. In addition, Hebert does not teach identifying the DSP circuit which is appropriate for that particular type of conference. Thus, there is not obvious-type double patenting of the presently stated claim 2 with Hebert alone. Claim 17 has been cancelled.

In addition, Phaal does not render Applicants invention as claimed in claim 2 obvious. In addition to the distinctions outlined in previous responses filed by Applicants, Phaal does not provide for a large conference with participants coupled to the system via the PSTN or a private network using any type of telecommunications device, such as a traditional landline telephone. Phaal teaches a session establishment between a host and multiple clients which is conducted when a client interacts with a particular web site over the Internet via a personal computer. The Phaal system does not accommodate users who are coupled to the system via a traditional landline telephone, nor a mobile telephone that is not accessing a website, via the Internet. Thus, the Phaal system is of a more narrow scope in that, it requires participants to have Internet access and, in that environment,

Phaal provides solutions to Internet traffic to certain websites. It is not providing solutions about assigning DSP resources in the most efficient or dependable manner to assure conferencing services are reliably provided depending upon the defined conference type and for multiple participants, each of whom may be using any one of a variety of telecommunications devices, as provided by Applicant's method. Further, the combination of Hebert and Phaal does not render Applicant's invention obvious because Hebert does not suggest defining a conference type, nor an algorithm for selecting the correct DSP card, and Phaal does not suggest or teach participants who are coupled to the system via telephone devices, that are not coupled to the Internet. Claim 2 has been amended herein to clarify these distinctions, and it is respectfully submitted that the claim as amended is not obvious in view of Hebert and Phaal and further, claim 2 now in condition for allowance. Claim 17 has been cancelled.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 2, 5, 7-13 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hebert and Phaal.

The distinctions which newly amended claim 2 has over both references are set forth above. Claim 5, which is dependent upon claim 2, adds the further limitation that user-defined parameters can be employed in providing the conferencing services. Once again, the Phaal system which admits new client requests to sessions in progress on a host web site does not render obvious Applicants' method of providing conferencing services

in a telecommunications system, which method is a procedure for assigning DSP resources to increase dependability and resource management in handling large voice conferences. The method of claim 2 is not rendered obvious in view of either Herbert or Phaal alone or in combination. Hebert does not teach predefining a conference type an assigning node having the best DSP resources for that conference, and Phaal teaches nothing about voice conferencing using DSP cards at all, and Phaal's system cannot accommodate participants who are not using a personal computer coupled to the Internet. Thus, the references do not alone, nor in combination disclose, teach or suggest Applicants' improved conferencing system and method as claimed in the amended claims.

Claims 7 through 13 are dependent directly or indirectly on newly amended claim 2, and they add even further limitations to that which is claimed in amended independent claim 2, and it is respectfully submitted that they are thus in condition for allowance.

Claim 14 was rejected under 35 U.S.C. §103(a) as unpatentable over Hebert and Phaal in view of United States Patent No. 6,324,169 to Roy ("Roy").

Claim 14 is indirectly dependent upon newly amended claim 2, and adds the further limitation that a static conference can be assigned to a DSP on a "best fit" basis. Roy's conferencing resources are provided via a wide area network that is interconnected with routers that in turn serve switched LAN hubs that communicate with customers workstations. In contrast, Applicants' method, involves the actual switching nodes and conferencing nodes which intake the voice information to create a conferenced output and switch this back out to the participants. Applicants' method can utilize circuit switched or packet switched incoming information. Roy is a programmed system for

providing multimedia conferencing over a packet switched network. As claimed in claim 2 allows for participants to be coupled to the system via any telecommunication device that can be coupled to the PSTN or a private network, but does not have to be a part of the specially programmed system as defined by Roy.

Allowable Subject Matter

Claim 3 was rewritten in independent form in the previous response and it is respectfully submitted that it is now in condition for allowance. Claim 6 depends upon claim 3. Claim 15 was previously amended to include the elements of the base claim, and claim 16 depends upon claim 15. Claim 18 has been rewritten herein in independent form to include the elements in the base claim, and claim 19 is dependent upon claim 18. New claims 20 and 21 been added.

SUMMARY

Applicants respectfully submit that in view of the amendments and arguments herein, all of the objections and rejections have been addressed and overcome, and reconsideration and allowance is respectfully requested. Please do not hesitate to contact the undersigned in order to advance the prosecution of this application in any respect.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

Rita M. Rooney
Reg. No. 30,585
CESARI AND MCKENNA, LLP
88 Black Falcon Avenue
Boston, MA 02210-2414
(617) 951-2500

PTO/SB/17 (12-04v2)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 1,810.00

Complete if Known	
Application Number	09/544,735
Filing Date	April 7, 2000
First Named Inventor	John T. Lynch et al.
Examiner Name	Melanie Jagannathan
Art Unit	2666
Attorney Docket No.	104005-0111

METHOD OF PAYMENT (check all that apply)

☑ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☑ Deposit Account Deposit Account Number: 03-1237 Deposit Account Name: Cesari and McKenna, LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**

☑ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☑ Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
		Small Entity		Small Entity		Small Entity	
Application Type	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fees Paid ($)
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims		Extra Claims	Fee ($)		Fee Paid ($)
_____	- 20 or HP =	_____	x _____	=	_____

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims		Extra Claims	Fee ($)		Fee Paid ($)
_____	- 3 or HP =	_____	x _____	=	_____

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims	
Fee ($)	Fee Paid ($)
_____	_____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets		Extra Sheets		Number of each additional 50 or fraction thereof	Fee ($)		Fee Paid ($)
_____	- 100 =	_____	/ 50 =	_____ (round up to a whole number)	x _____	=	_____

4. OTHER FEE(S)

	Fees Paid ($)
Non-English Specification, $130 fee (no small entity discount)	
Other (e.g., late filing surcharge): RCE and Three Month Extension of Time	1,810.00

SUBMITTED BY

Signature	Rita M Rooney	Registration No. (Attorney/Agent) 30,585	Telephone (617) 951-2500
Name (Print/Type)	Rita M. Rooney		Date May 2, 2005

PATENTS
104005-0111

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re The Application of:
John T. Lynch et al.

Serial No.: 09/544,735

Filed: April 7, 2000

For: METHOD AND APPARATUS FOR DYNAMIC ALLOCATION OF CONFERENCING RESOURCES IN A TELECOMMUNICATIONS SYSTEM

Examiner: Melanie Jagannathan

Art Unit: 2666

Cesari and McKenna, LLP
88 Black Falcon Avenue
Boston, MA 02210
May 2, 2005

EXPRESS-MAIL DEPOSIT

"Express Mail" Mailing-Label Number: EV 432393477 US

The following papers are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service pursuant to 37 C.F.R. §1.10:

_X_ Request for Continued Examination
_X_ Check No. 30361 for $1,810.00
_X_ Copy of an Amendment previously filed on February 2, 2005
_X_ Fee Transmittal Letter
_X_ Petition 3 Months of Extended Time
_X_ Return Receipt Postcard